

# **EXHIBIT G**



December 12, 2007

## OPINION

# The Roots of the Mortgage Crisis

By ALAN GREENSPAN

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On Aug. 9, 2007, and the days immediately following, financial markets in much of the world seized up. Virtually overnight the seemingly insatiable desire for financial risk came to an abrupt halt as the price of risk unexpectedly surged. Interest rates on a wide range of asset classes, especially interbank lending, asset-backed commercial paper and junk bonds, rose sharply relative to riskless U.S. Treasury securities. Over the past five years, risk had become increasingly underpriced as market euphoria, fostered by an unprecedented global growth rate, gained cumulative traction.



The crisis was thus an accident waiting to happen. If it had not been triggered by the mispricing of securitized subprime mortgages, it would have been produced by eruptions in some other market. As I have noted elsewhere, history has not dealt kindly with protracted periods of low risk premiums.

The root of the current crisis, as I see it, lies back in the aftermath of the Cold War, when the economic ruin of the Soviet Bloc was exposed with the fall of the Berlin Wall. Following these world-shaking events, market


capitalism quietly, but rapidly, displaced much of the discredited central planning that was so prevalent in the Third World.

A large segment of the erstwhile Third World, especially China, replicated the successful economic export-oriented model of the so-called Asian Tigers: Fairly well educated, low-cost workforces were joined with developed-world technology and protected by an increasing rule of law, to unleash explosive economic growth. Since 2000, the real GDP growth of the developing world has been more than double that of the developed world.

The surge in competitive, low-priced exports from developing countries, especially those to Europe and the U.S., flattened labor compensation in developed countries, and reduced the rate of inflation expectations throughout the world, including those inflation expectations embedded in global long-term interest rates.

In addition, there has been a pronounced fall in global real interest rates since the early 1990s, which, of necessity, indicated that global saving intentions chronically had exceeded intentions to invest. In the developing world, consumption evidently could not keep up with the surge of

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income and, as a consequence, the savings rate of the developed world soared from 24% of nominal GDP in 1999 to 33% in 2006, far outstripping its investment rate.

Yet the actual global saving rate in 2006, overall, was only modestly higher than in 1999, suggesting that the uptrend in developing-economy saving intentions overlapped with, and largely tempered, declining investment intentions in the developed world. In the U.S., for example, the surge of innovation and productivity growth apparently started taking a breather in 2004. That weakened global investment has been the major determinant in the decline of global real long-term interest rates is also the conclusion of a recent (March 2007) Bank of Canada study.

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Equity premiums and real-estate capitalization rates were inevitably arbitrated lower by the fall in global long-term interest rates. Asset prices accordingly moved dramatically higher. Not only did global share prices recover from the dot-com crash, they moved ever upward.

The value of equities traded on the world's major stock exchanges has risen to more than \$50 trillion, double what it was in 2002. Sharply rising home prices erupted into major housing bubbles world-wide, Japan and Germany (for differing reasons) being the only principal exceptions. The Economist's surveys document the remarkable convergence of more than 20 individual nations' house price rises during the past decade. U.S. price gains, at their peak, were no more than average.

After more than a half-century observing numerous price bubbles evolve and deflate, I have reluctantly concluded that bubbles cannot be safely defused by monetary policy or other policy initiatives before the speculative fever breaks on its own. There was clearly little the world's central banks could do to temper this most recent surge in human euphoria, in some ways reminiscent of the Dutch Tulip craze of the 17th century and South Sea Bubble of the 18th century.

I do not doubt that a low U.S. federal-funds rate in response to the dot-com crash, and especially the 1% rate set in mid-2003 to counter potential deflation, lowered interest rates on adjustable-rate mortgages (ARMs) and may have contributed to the rise in U.S. home prices. In my judgment, however, the impact on demand for homes financed with ARMs was not major.

Demand in those days was driven by the expectation of rising prices -- the dynamic that fuels most asset-price bubbles. If low adjustable-rate financing had not been available, most of the demand would have been financed with fixed rate, long-term mortgages. In fact, home prices continued to rise for two years subsequent to the peak of ARM originations (seasonally adjusted).

I and my colleagues at the Fed believed that the potential threat of corrosive deflation in 2003 was real, even though deflation was not thought to be the most likely projection. We will never know whether the temporary 1% federal-funds rate fended off a deflationary crisis, potentially much more daunting than the current one. But I did fret that maintaining rates too low for too long was problematic. The failure of either the growth of the monetary base, or of M2, to exceed 5% while the fed-funds rate was 1% assuaged my concern that we had added inflationary tinder to the economy.

In mid-2004, as the economy firmed, the Federal Reserve started to reverse the easy monetary

policy. I had expected, as a bonus, a consequent increase in long-term interest rates, which might have helped to dampen the then mounting U.S. housing price surge. It did not happen. We had presumed long-term rates, including mortgage rates, would rise, as had been the case at the beginnings of five previous monetary policy tightening episodes, dating back to 1980. But after an initial surge in the spring of 2004, long-term rates fell back and, despite progressive Federal Reserve tightening through 2005, long-term rates barely moved.

In retrospect, global economic forces, which have been building for decades, appear to have gained effective control of the pricing of longer debt maturities. Simple correlations between short- and long-term interest rates in the U.S. remain significant, but have been declining for over a half-century. Asset prices more generally are gradually being decoupled from short-term interest rates.

Arbitragable assets -- equities, bonds and real estate, and the financial assets engendered by their intermediation -- now swamp the resources of central banks. The market value of global long-term securities is approaching \$100 trillion. Carry trade and foreign exchange markets have become huge.

The depth of these markets became readily apparent in March 2004, when Japanese monetary authorities abruptly ceased intervention in support of the U.S. dollar after accumulating more than \$150 billion of foreign exchange in the preceding three months. Beyond a few days of gyrations following the halt in purchases, nothing of lasting significance appears to have happened. Even the then seemingly massive Japanese purchases of foreign exchange barely budged the prices of the vast global pool of tradable securities.

In theory, central banks can expand their balance sheets without limit. In practice, they are constrained by the potential inflationary impact of their actions. The ability of central banks and their governments to join with the International Monetary Fund in broad-based currency stabilization is arguably long since gone. More generally, global forces, combined with lower international trade barriers, have diminished the scope of national governments to affect the paths of their economies.

Although central banks appear to have lost control of longer term interest rates, they continue to be dominant in the markets for assets with shorter maturities, where money and near monies are created. Thus central banks retain their ability to contain pressures on the prices of goods and services, that is, on the conventional measures of inflation.

The current credit crisis will come to an end when the overhang of inventories of newly built homes is largely liquidated, and home price deflation comes to an end. That will stabilize the now-uncertain value of the home equity that acts as a buffer for all home mortgages, but most importantly for those held as collateral for residential mortgage-backed securities. Very large losses will, no doubt, be taken as a consequence of the crisis. But after a period of protracted adjustment, the U.S. economy, and the world economy more generally, will be able to get back to business.

***Mr. Greenspan, former chairman of the Federal Reserve, is president of Greenspan Associates LLC and author of "The Age of Turbulence: Adventures in a New World" (Penguin, 2007).***

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